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Application number 09/682,007 LeRoy David Dickson Art Unit 2872 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Number: 09/682,007  
Application Filed: July 9, 2001  
Applicant: LeRoy David Dickson  
Title of Invention: Enhanced Volume Phase Grating with High Dispersion,  
High Diffraction Efficiency and Low Polarization Sensitivity  
Examiner: Audrey Y. Chang  
Art Unit: 2872  
Attorney Docket Number: 07032001

Assistant Commissioner for Patents  
Washington, DC 20231

RESPONSE TO OFFICE ACTION

Madam:

In response to the Office Action mailed April 30, 2002, please amend the above application as follows. Additions to the claims are indicated by underline and deletions from the claims are indicated by bold brackets [ ].

AMENDMENT OF THE CLAIMS:

Claim 9 amended:

9. An enhanced volume phase grating comprising:

a rigid support means;

a volume phase medium attached to said rigid support means;

a transparent cover means attached to said volume phase medium with a transparent adhesive to provide a sealant and protectant for said volume phase medium;

the bulk refractive index,  $n$ , of said volume phase medium being periodically modulated within the thickness,  $T$ , of said volume phase medium in a direction parallel to the surface of said volume phase medium, with a peak value of refractive index equal to  $n + \Delta n$ , where  $\Delta n$  is the peak modulation of said bulk refractive index,  $n$ , the periodic sequence of said peak values of said refractive index throughout said thickness,  $T$ , of said volume phase medium creating a periodic structure of Bragg surfaces within said volume phase medium with a period,  $d$ , where

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